

## Complete Syntax Itemization of the BDT Language

Section g4 Number	Command Description Name	Operation Code	Arg1	Arg2	Arg3	Ar
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2	BDTAdmin	201	Variable		Variable	
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Example:

TAdmin(A , B) BD

aning: Me

Co  
nstructs a new BDTAdmin object with the specified name A and argum  
ent B.

	BDTArg	202	Variable			
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Example:

TArg(A) BD

aning: Me

Co  
nstructs a new BDTArg object with the specified binary data A.

	BDTBinutil	203				
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Example:

TBinutil() BD

aning: Me

Co  
nstruct a new BDTBinutil object

	BDTConstants	204				
--	--------------	-----	--	--	--	--

ample: Ex

TConstants() BD

aning: Me

Co  
nstruct a new BDTConstants object

BDTDebug	205			Ex
ample:				
TDebug()				BD
aning:				Me
nstruct a new BDTDebug object				Co

BDTDump	206			Ex
ample:				
TDump()				BD
aning:				Me
nstruct a new BDTDump object				Co

BDTException	207	Variable		
Example:				
TException(A)				BD
aning:				Me
nstruct a new BDTException object with argument A				Co

BDTGeometry	208	Variable	Variable	
Example:				
TGeometry( A, B)				BD
aning:				Me
nstructs a new BDTGeometry object with binary-coded A and B				Co

BDTMaterial	209	Variable	Variable	
Example:				
TMaterial( A, B)				BD
aning:				Me
				Co

nstructs a new BDMaterial object with binary-coded A and B

BDTMedia	210	Variable	Variable
----------	-----	----------	----------

Example:

TMedia( A, B)

BD

Me

aning:

Co

nstructs a new BDTMedia object with binary-coded A and B

BDTNode	211	Variable	Variable
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Example:

TNode( A, B)

BD

Me

aning:

Co

nstructs a new BDTNode object with binary-coded A and B

BDTObject	212	Variable	Variable
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Example:

TObject( A, B)

BD

Me

aning:

Co

nstructs a new BDTObject object with binary-coded A and B

BDTObjectEngine	213		
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ample:

Ex

BD

TObjectEngine()

Me

aning:

Co

nstructs a new BDTObjectEngine object

BDTReader	214	Variable	Variable
-----------	-----	----------	----------

Example:

TReader( A, B)

BD

Me

## Page 4

Co

Ex

BD

Me

Co

BD

Me

Co

BD

Me

Co

BD

Me

Co

Ex

BD

Example:

TType()			Me
aning:			Co
nstructs a new BDTType object			
BDTVREngine	219		Ex
ample:			BD
TVREngine()			Me
aning:			Co
nstructs a new BDTVREngine object			
BDTVRMLConverter	210		
Example:			BD
TVRMLConverter()			Me
aning:			Co
nstructs a new BDTVRLConverter object			
BDTWizard	211		Ex
ample:			BD
TWizard()			Me
aning:			Co
nstructs a new BDTWizard object			
BDTWriter	212		
Example:			BD
TWriter()			Me
aning:			Co
nstructs a new BDTWriter object			

Convert	213	Variable	
Example:			Co
nvert(A)			Me
aning:			Co
nvert VRML file A to BDT file			
CCW	214		Ex
ample:			cc
w()			Me
aning:			Ge
ts the handedness of this mesh			
debug	215	Variable	
Example:			de
bug(A)			Me
aning:			Pr
ints a debug string A if level is greater than the current class d			
ebug level			
flush	216		Ex
ample:			fl
ush()			Me
aning:			Fl
ushes the OutputStream and clears the BDTOBJECT buffer			
getBDTOBJECTS	217		Ex
ample:			ge
tBDTOBJECTS()			Me

aning:					Re
ads an array of BDT objects					
getSceneRoot	218				Ex
ample:					ge
tSceneRoot()					Me
aning:					Ge
t the ID of the scenegraph root transform					
imagePixels	219	Variable	Variable		
Example:					im
agePixels( A, B)					Me
aning:					Co
nvert an image to a matrix( A, B) of pixel values and store the im					age dimensions
imagePixels	220	Variable	Variable		
Example:					im
agePixels( A, B)					Me
aning:					Co
nvert an image to a matrix( A, B) of pixel values and store the im					age dimensions
invertMatrix	221	Variable	Variable		
Example:					in
vertMatrix( A, B)					Me
aing:					In
vert a 4x4 homogeneous transformation matrix( A, B)					

isAvailable 222  
 Example:  
 Available()  
 aning:  
 eck if more input from the stream is available

is  
 Me  
 Ch

map 223  
 ample:  
 p()  
 aning:  
 t the texture coordinates for this mesh

Ex  
 ma  
 Me  
 Ge

loadFile 224 Variable  
 Example:  
 adFile(A)  
 aning:  
 ad a binary file, A, over the network into a byte array

lo  
 Me  
 Re

loadScene 225 Variable  
 Example:  
 adScene(BDObject())  
 aning:  
 nstruct a scenegraph in the specified rendering engine

lo  
 Me  
 Co

mapI 226  
 ample:  
 pI()

Ex  
 ma  
 Me



aning:

Ge

t the texture coordinate indices of this mesh

material

227

Example:

ma

terial()

Me

aning:

Ge

t the material for this mesh

name

228

Ex

ample:

na

me()

Me

aning:

Ge

t the name of this object

normalizeVector 229

Constant

Constant

Example:

no

rmalizeVector( A, B)

Me

aning:

No

rmalize a 3D vector( A, B)

normals

230

Example:

n

ormals()

Me

aning:

Ge

ts the normals of this mesh

normalsI

231

Example:

n

ormalsI()			
aning:			Me
ts the vertex indices of this mesh			Ge
ample:	parse	232	Ex
rse()			pa
aning:			Me
rses an array of binary arguments to object-specific fields			Pa
ample:	pick	233	Ex
ck( A, B)			pi
aning:			Me
rses an array of binary arguments to object-specific fields			Pa
ample:	renderFrame	234	Ex
nderFrame()			re
aning:			Me
TRender current scene to framebuffer			BD
ample:	scale	235	Ex
ale()			sc
aning:			Me
ts the scale of this node			Ge

scaleOrientation	236			
Example:				
scaleOrientation()				SC
Setting:				Me
sets the scale orientation of this node				Ge
setAntialias	237			
Example:				
setAntialias()				se
Setting:				Me
enable antialiasing				En
setBackgroundImage	238	Variable		
Example:				
setBackgroundImage(A)				se
Setting:				Me
sets the background image A for the scene				Se
setCameraLookAt	239	Constant	Constant	Co
Example:				
setCameraLookAt( A, B, C)				se
Setting:				Me
sets the view-direction vector( A, B, C) of the scene camera				Se
setCameraPosition	240	Constant	Constant	
Example:				
setCameraPosition( A, B, C)				se
Setting:				Me
				Se

t the position( A, B, C) of the scene camera

setCameraUp	241	Constant	Constant	Co
Example:				

tCameraUp( A, B, C)

aning:

t the view-up vector( A, B, C) of the scene camera

setFocalDistance	242	Consatnt
Example:		

tFocalDistance(A)

aning:

t the focal distance A for the renderer

setFogActive	243		Ex
ample:			

tFogActive()

aning:

rns fog effects on

setMeshMaterial	244		Ex
ample:			

tMeshMaterial()

aning:

t the material for each face of a mesh

setMeshTexture	245		Ex
ample:			

tMeshTexture()

aning:				Me
t the texture for a mesh				Se
setMeshVertexCoord	246	Constant	Constant	
Constant	Example:			
tMeshVertexCoord( A, B, C)				se
aning:				Me
t the position( A, B, C) of the mesh vertice				Se
setRenderTarget	247	Variable		
Example:				
tRenderTarget( A)				se
aning:				Me
t the target A to which this render's graphics will be drawn				Se
setTransformMatrix	248	Constant	Constant	
Constant	Example:			
tTransformMatrix( A, B, C)				se
aning:				Me
t the transformation matrix( A, B, C) associated with a particular transform				Se
sound	249			Ex
ample:				
und()				so
aning:				Me
t sound data				ge
texture	250			Ex

ample:

xture()

te

aning:

Me

t texture image data

ge

transformVector 251

Constant

Constant

Co

nstant

Example:

ansformVector( A, B, C)

tr

aning:

Me

ply a homogeneous transformation( A, B, C) to a 3D vector

Ap

translation

252

Example:

anslation()

tr

aning:

Me

ts the translation of this node

Ge

transparency 253

ample:

Ex

ansparency()

tr

aning:

Me

t the transparency of this material

Ge

type

254

ample:

Ex

pe()

ty

aning:

Me

t the type of this object

Ge

vertices 255  
 Example:  
 rtices() ve  
 aning: Me  
 ts the vertices of this mesh Ge

verticesI 256  
 Example:  
 rticesI() ve  
 aning: Me  
 ts the vertex indices of this mesh Ge

zeroMatrix 257  
 Example:  
 roMatrix() ze  
 aning: Me  
 ll a matrix with zeros Fi

4 AddChild 404  
 Example:  
 dChild() Ad  
 aning: Me  
 d a child transform or mesh to a transform Ad

AddMatrix 405 Constant Constant  
 Constant Example:  
 dMatrix( A, B, C) Ad  
 aning: Me

d 2 Matrices with dimensions of A, B, and C Ad

argToBoolean 406 Constant

Example:

gToBoolean(A) ar

aning: Me

nverts binary argument A to a boolean data of values Co

argToFloatArray 407 Constant Constant

Example:

gToFloatArray( A, B) ar

aning: Me

nverts dimensions of A and B to an array fo floating-point values Co

argToFloatMatrix 408 Constant Constant

Example:

gToFloatMatrix( A, B) ar

aning: Me

nverts dimensions of A and B to a matrix fo floating-point values Co

beginFrame 409

Example:

ginFrame() be

aning: Me

itialize the framebuffer and other render resoruces for drawing th In  
e next frame to the screen.

booleanToByteArray 410 Variable

Example:



booleanToByteArray(A)

Me

aning:

Co

nvert a boolean A to a byte array

byteArrayToFloat

411

Variable

Example:

by

teArrayToFloat(A)

Me

aning:

Co

nvert a byte array A into the corresponding floating-point number

children

412

Example:

ch

ildren()

Me

aning:

Ge

t the children of this mesh

command

413

Ex

ample:

co

mmand()

Me

aning:

Re

turns the command associated with this BDTAdmin object

concatenateMatrix

414

Variable

Variable

Example:

co

ncatenateMatrix( A, B)

Me

aning:

Co

mpose A and B matrices

copyMatrix

415

Variable

Variable

Example:

pyMatrix( A, B) co  
 aning: Me  
 py entries of one matrix( A, B) into another Co

distance 416 Variable Variable

Example:

stance( A, B) di  
 aning: Me  
 lculates the distance between two points of A and B in 3D space Ca

dotVectors 417 Variable Variable

Example:

tVectors( A, B) do  
 aning: Me  
 lculates the dot-product of two vectors of A and B Ca

floatToByteArray 418 Variable

Example:

oatToByteArray(A) fl  
 aning: Me  
 nverts a floating-point number A to a byte array Co

scaleMatrix 419 Constant Constant

Example:

aleMatrix( A, B, C) sc  
 aning: Me  
 ltiply each entry of a matrix( A, B, C) by a scaling factor Mu

5	createAmbientLight	500	
Example:			
	createAmbientLight()		cr
			Me
	aning:		Cr
	create a new default ambient light with intensity 1.0f		
	createDirectionalLight	501	
Example:			
	createDirectionalLight()		cr
			Me
	aning:		Cr
	create a new default directional light pointing down the negative y axis		
	createMaterial	502	Ex
ample:			
	createMaterial()		cr
			Me
	aning:		Cr
	create a new material with Gouraud shading, grey diffuse color and zero transparency		
	createMesh	503	
Example:			
	createMesh()		cr
			Me
	aning:		Cr
	create a new empty mesh		
	createPointLight	504	
Example:			
	createPointLight()		cr

aning:				Me
create a new omnidirectional point light source positioned at the origin				Cr
createTexture	505			Ex
ample:				cr
createTexture()				Me
aning:				Cr
create a new empty texture				
createTransform()	506			
Example:				cr
createTransform()				Me
aning:				Cr
create a new transform initialized to the unit transform				
destroy	507			Ex
ample:				de
destroy()				Me
aning:				Re
release unused render resources				
diffuseColor	508			Ex
ample:				di
diffuseColor()				Me
aning:				Ge
set the diffuse color of this material				
distance	509	Variable	Variable	

Example:

di

stance( A, B)

Me

aning:

Ca

lculates the distance between two points of A and B in 3D space

endFrame

510

Example:

en

dFrame()

Me

aning:

Dr

aw framebuffer to the screen using double-buffered graphics

generateNormals 511

Ex

ample:

ge

nerateNormals()

Me

aning:

Ge

nerate surface and vertex normals for a triangle mesh

rotxMatrix

512

Constant

Constant

Example:

ro

txMatrix( A, B)

Me

aning:

Cr

reate a matrix( A, B) representing a 3D rotation about the x axis

rotyMatrix

513

Constant

Constant

Example:

ro

tyMatrix( A, B)

Me

aning:

Cr

reate a matrix( A, B) representing a 3D rotation about the y axis

# Complete table for CDROM 111201

rotzMatrix

514

Constant

Constant

Example:

tzMatrix( A, B)

ro

Me

aning:

Cr

reate a matrix( A, B) representing a 3D rotation about the z axis